

One Connection - A World of Opportunities



# Impacts of TN Validation on User Display

## Cequint User Study Findings

Presentation for the ATIS IP-NNI Task Force  
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## Agenda

- Purpose of Study and Learnings
- Study Demographics
- Study Results
- Findings by Demographics
- Findings by Mobile Behavior
- Conclusion

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## Purpose of Study



Cequint has conducted a user study to gather user sentiment and the impact of;

### **Call Authentication on a user's trust and behavior**

for incoming calls and how it applies to various service offering of in-market call identification solutions.

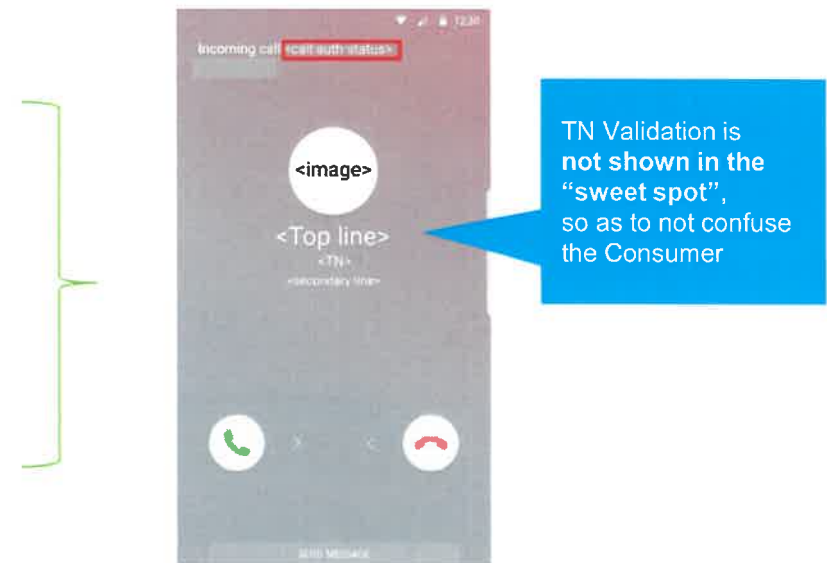
Cequint is a wholly owned subsidiary of TNS:

- Delivering Mobile Caller ID / Protection services since 2007 to all Tier 1 Mobile Operators
- Shipped software on over 550 Makes / Models
- 250M users have experienced our services with “tens of millions” active users per month

As a consumer service, understanding the user impact is imperative to our success

# Learnings

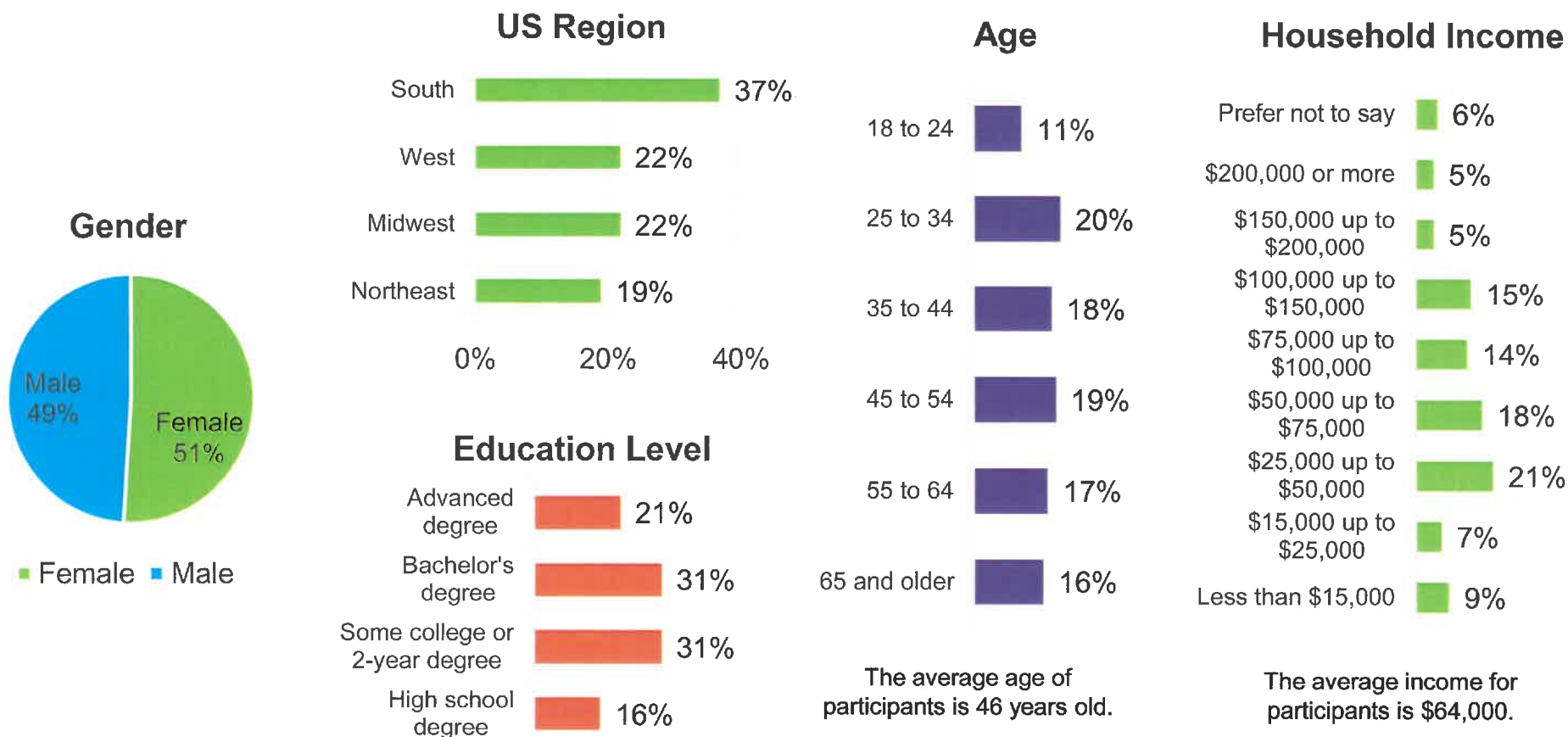
- ❑ Ability to display the identity of the caller and the purpose of the call was a key feature users were looking for
- ❑ Don't show anything related to TN Validation and rely on your analytics to mark calls as "bad"
- ❑ Be as discreet as possible when displaying the TN Validation indicator and be prepared to educate users in order to avoid care calls
- ❑ Users find Accuracy of Analytics important; STIR/SHAKEN puts additional pressure on the Analytics providers to correctly classify/tag the caller



# Study Participant Demographic Profile

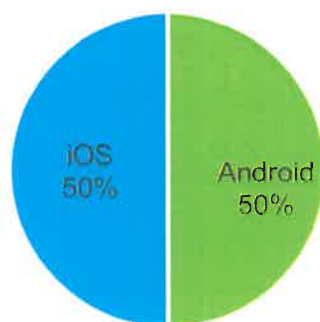


1,000 respondents were interviewed online



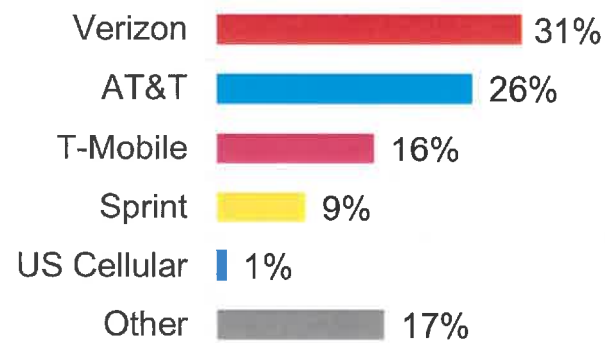
# Study Participant Mobile Profile

## Operating System

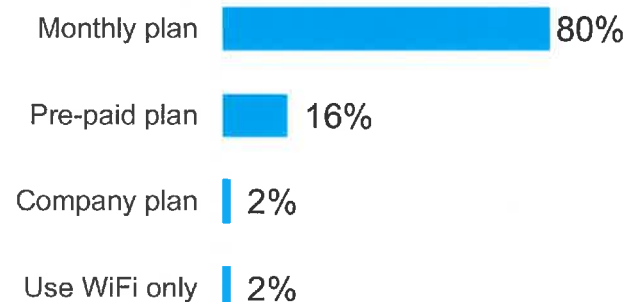


■ Android ■ iOS

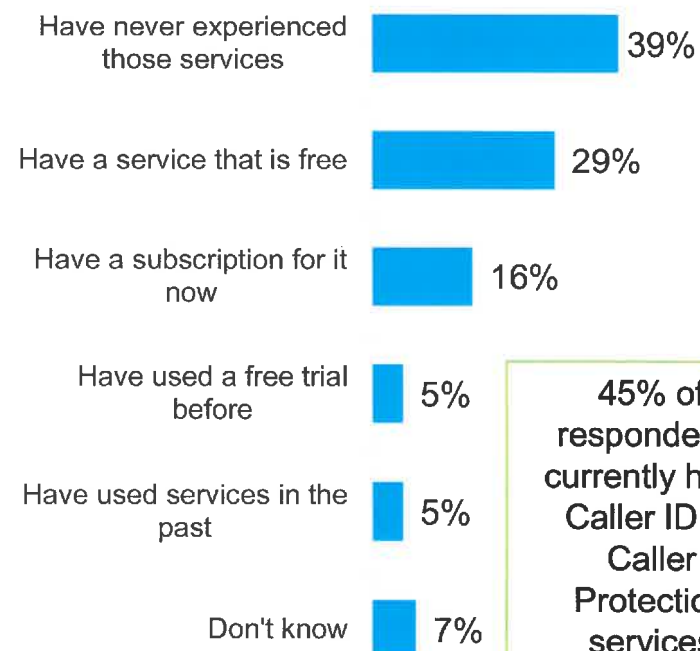
## Mobile Carrier



## Type of Plan



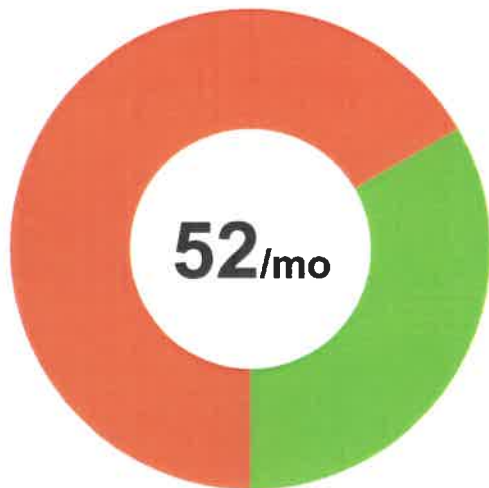
## Experience With Caller ID/Caller Protection Services



**45% of  
respondents  
currently have  
Caller ID or  
Caller  
Protection  
services**

# Background Data on Call Patterns

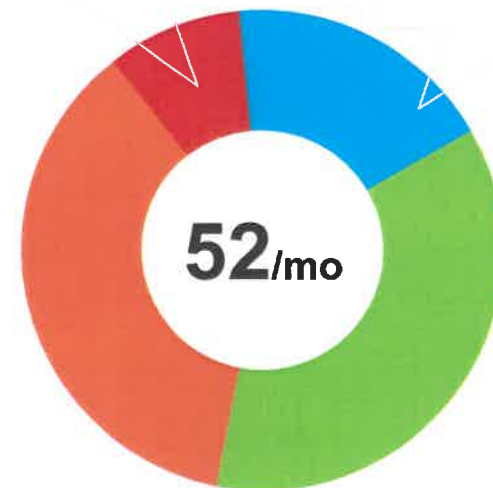
Callers not in contacts (unknown callers)



■ Wanted ■ Unwanted

Unwanted Spoofed  
Calls

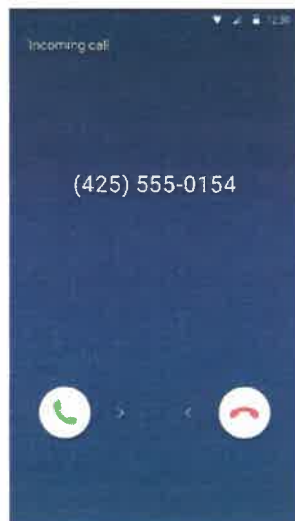
Unwanted Legitimate  
Calls



■ Wanted ■ Unwanted

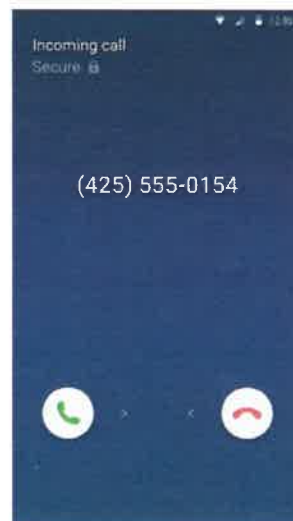
# Overview :: Baseline vs. TN Validation (Passed / Failed)

**Baseline**



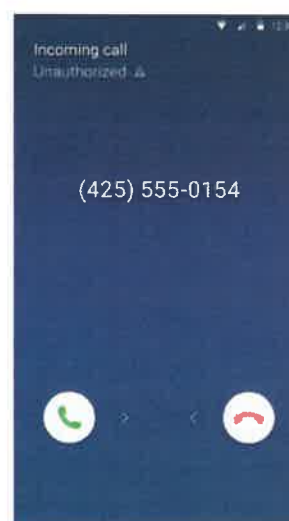
Unknown caller w/  
phone information  
only

**TN Validation Pass**



Unknown caller w/  
**TN Validation Passed**  
icon and text

**TN Validation Failed**



Unknown caller w/  
**TN Validation Failed**  
icon and text

**Baseline:** Respondents were shown an incoming call screen (representing a call from an unknown number) with phone number only and asked about their sentiment towards the callers (e.g. trust) as well the likely actions they would take. (e.g. answer, block)

**TN Validation:** Respondents were shown an incoming call screen with Passed or Failed TN Validation information and asked the same questions.

**Likelihood to Answer Question:** When seeing this amount of information on the screen during an incoming call, how likely are you to answer the call on a scale from 1 to 5 where 1 means "not at all likely" and 5 means "very likely" to answer? (n=1,000)

**Likelihood to Block Question:** When seeing this amount of information on the screen during an incoming call, how likely are you to block the call on a scale from 1 to 5 where 1 means "not at all likely" and 5 means "very likely" to answer? (n=1,000)

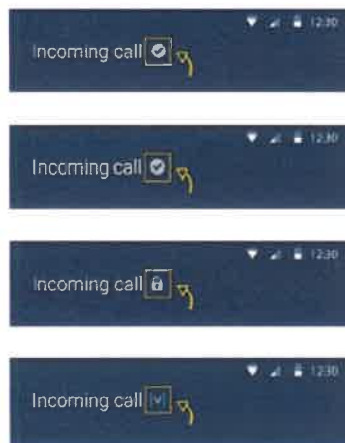
**Trust Question:** What level of trust do you have in the person on the other line being who they say they are when you see this amount of information during an incoming call?

**Clarity Question:** When seeing the information shown above, how clear or confusing do you find this screen when trying to decide whether or not you should answer a call?

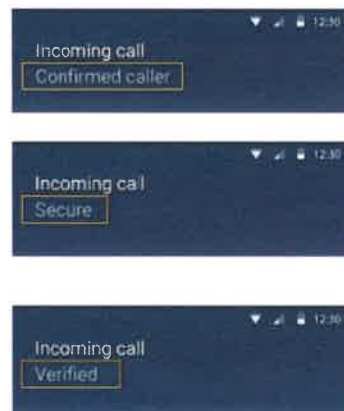


# Variations :: TN Validation Passed

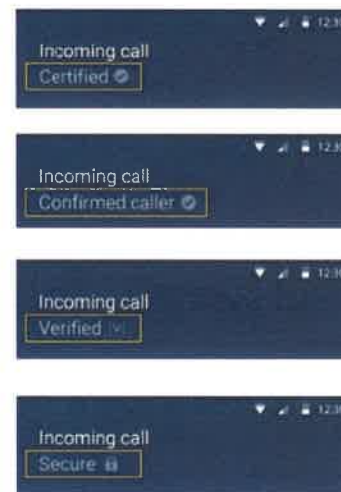
Icon only



Text only



Text w/ icon



Respondents were randomly shown various visual displays for **TN Validation Passed** on the incoming call screen.

Respondents were then gauged on the following:

- Perceived clarity of information shown
- Accuracy in determining what the visual display means

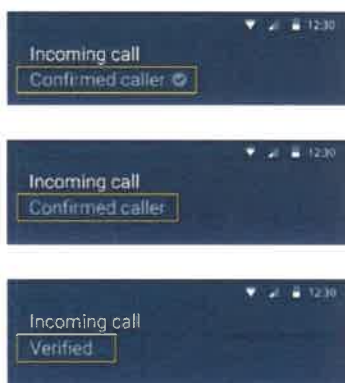
**Accuracy Question:** Looking at the section highlighted in yellow above, what does this icon mean to you? Please choose one.

Selections (shown in random order): i) Caller is reputable, ii) Caller is safe to talk to, iii) Caller's identity is authentic and not falsified, iv) Call connection is secure, v) other

**Clarity Question:** When seeing the icon highlighted in yellow in the image above, how clear or confusing do you find this specific icon when trying to decide whether or not you should answer a call?

# Observations :: Comparing TN Validation Displays

## Top display options



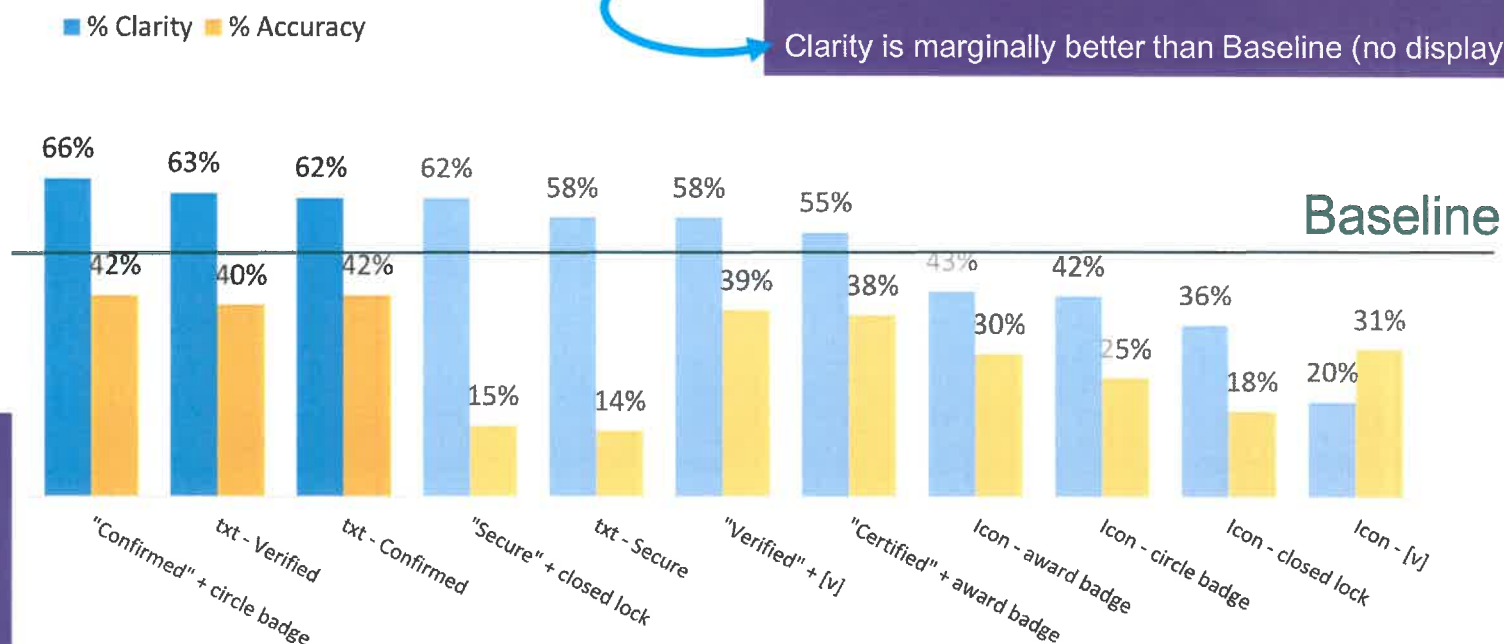
The combination of text and icon for "Confirmed caller" received the highest clarity and accuracy scores of all TN Validation Passed display options tested.

## Key Points

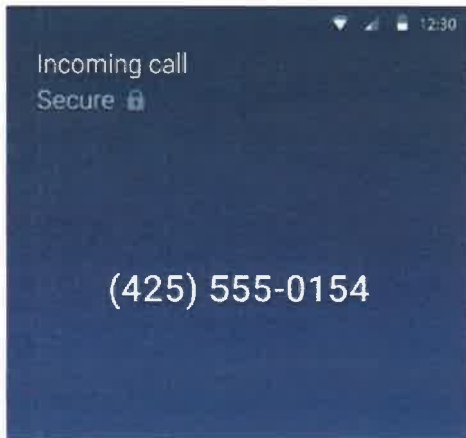
Respondents gave similar ratings on clarity and accuracy for most of the combination text & icon and the text only display options.

Exception is any display w/ the lock icon had the lowest accuracy out of all the options.

Clarity is marginally better than Baseline (no display).

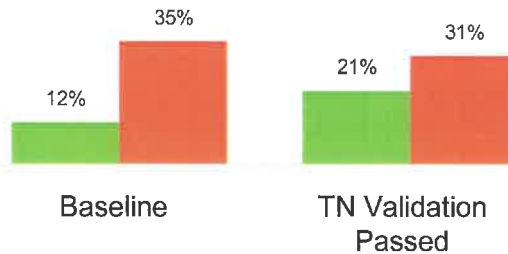


## Observations :: Baseline vs. TN Validation Passed

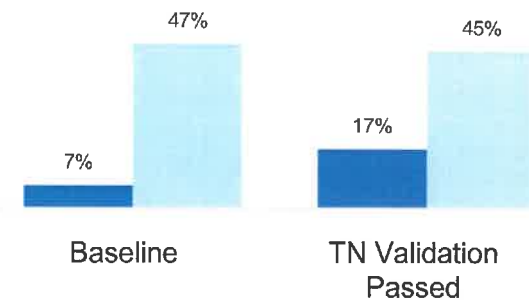


**Incoming call  
w/ TN Validation Passed**

■ % Likely to Answer ■ % Likely to Block



■ % Trust Caller ID ■ % Clarity



8 out of 10 people don't answer a call from an unknown number w/ **TN Validation Passed**.

Consumers are equally likely to block when **TN Validation Passed** is shown vs the baseline.

**TN Validation Passed** does not drastically change consumer's behaviors on incoming calls when compared to the baseline.

8 out of 10 people don't trust the caller even when they are **TN Validation Passed**.

Clarity does not improve with **TN Validation Passed** when compared to the baseline.

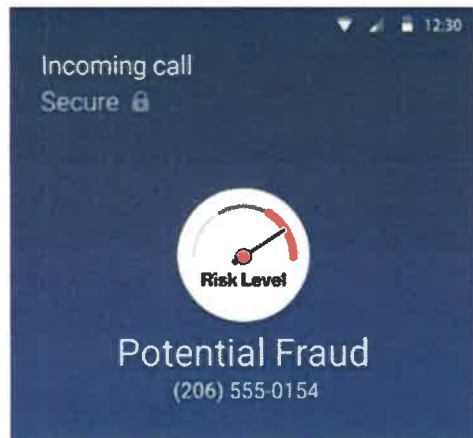
**Key Points**

## User Type: Basic (Free) Services w/ TN Validation



### Key Points

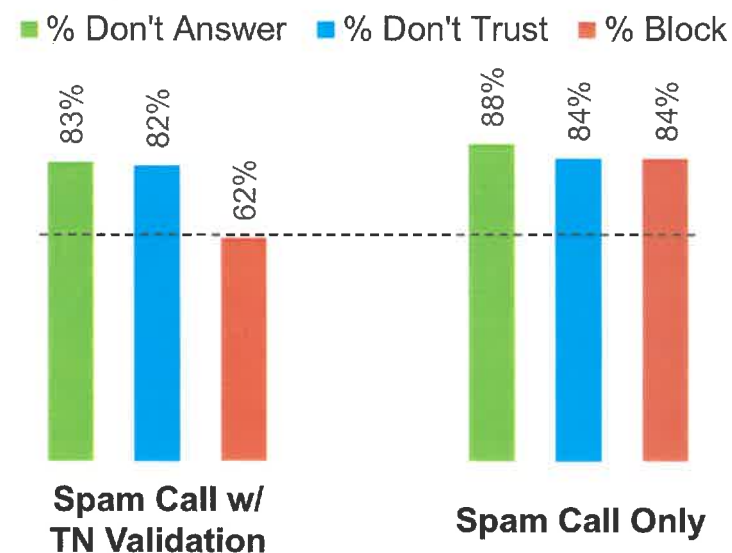
Analytics does a better job informing consumers about **unwanted calls** by detecting all types of Spam calls not just Spoofed calls.  
Consumer sentiments are stronger w/ Spam ID than TN Validation.  
TN Validation display w/ Spam ID provides **no added value** to consumers.



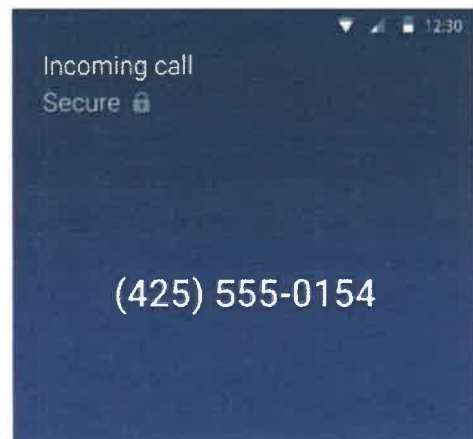
**Spam call  
w/ TN Validation Passed**



**Spam call  
w/ No TN Validation**

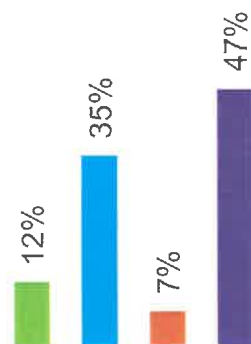


## User Type: Basic (Free) Services w/ TN Validation Passed



Incoming call  
w/ TN Validation Passed

■ % Answer ■ % Block ■ % Trust ■ % Clarity



Baseline



TN Validation Passed

4 out of 5 wanted calls are likely to go **unanswered** w/ TN Validation Passed alone.

3 out of 5 wanted calls are likely to be **blocked** w/ TN Validation Passed alone.

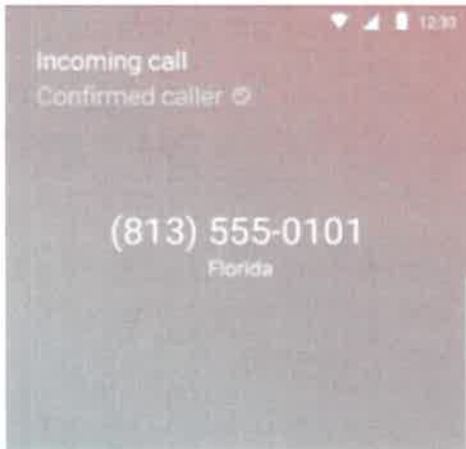
TN Validation Passed doesn't shift consumer sentiment in any significant way when compared to the baseline. (i.e. no information is shown)

### Key Points

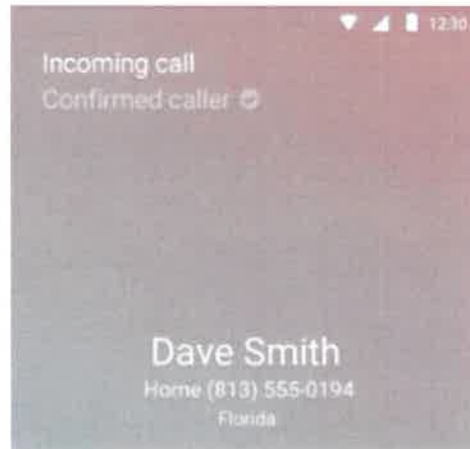
TN Validation Passed without enhanced caller identification does not add any real value to consumers. (majority of mobile consumers don't have an enhance caller ID service)

**Even with TN Validation Passed** display present, most **consumers do not trust the caller** nor are they likely to answer the call.

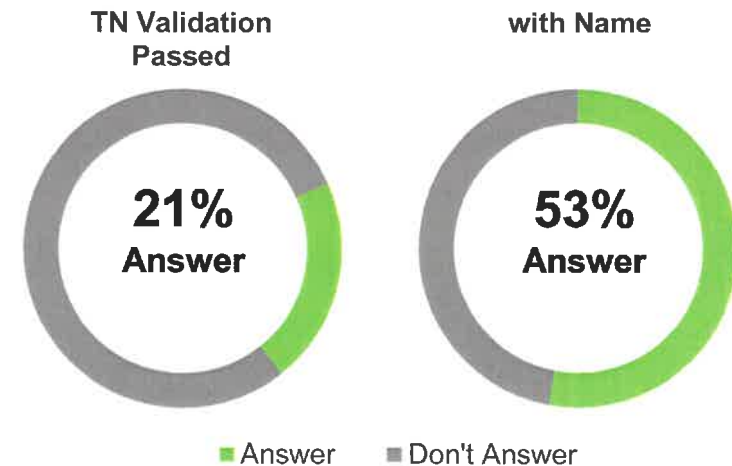
## User Type: Premium (Paid) w/ TN Validation



**Incoming call  
w/ TN Validation Passed**



**Name ID Incoming call  
w/ TN Validation Passed**



53% of calls are likely to be answered when **name** information is **provide**.

Consumers are 2.5x more likely to answer calls when **name** information is **provide**.

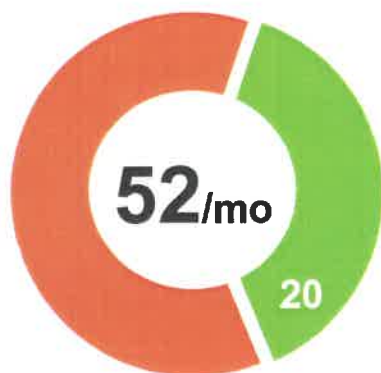
Consumers can better determine if a call is wanted when **name** information is **provided**.

**TN Validation Passed adds little value** to consumers compared to displaying Name because it provides marginal value for the incoming call.

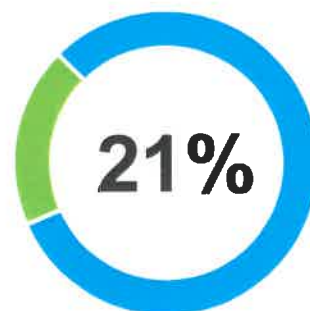
**Key Points**



## Missed “wanted” calls w/ Enhanced Caller ID

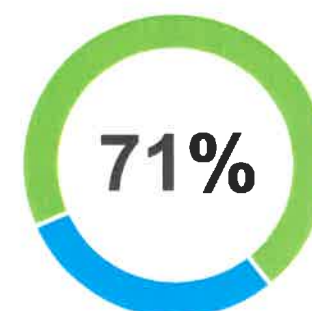


■ Wanted ■ Unwanted



■ Answer ■ Don't Answer

without Enhanced Caller ID

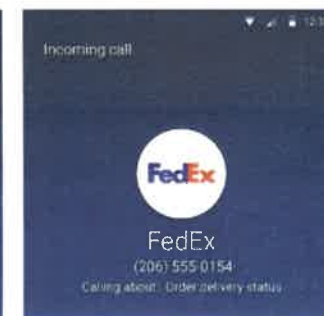


■ Answer ■ Don't Answer

with Enhanced Caller ID

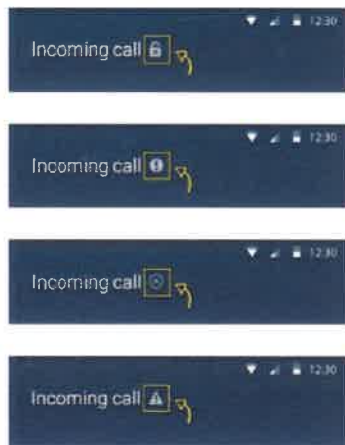
79% of wanted calls are **not likely to be answered**;

- A child's school,
- A delivery of your wine,
- A hospital or ...



## Variations :: TN Validation Failed Display Variations

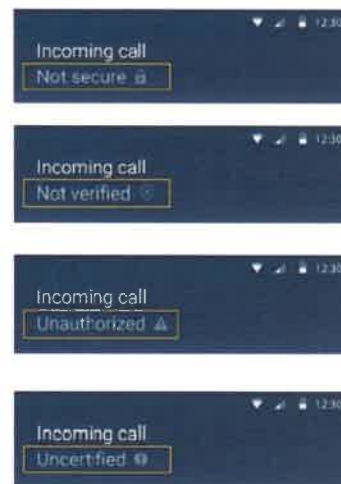
Icon only



Text only



Text w/ icon



Respondents were randomly shown various visual displays for **TN Validation Failed** on the incoming call screen.

Respondents were then gauged on the following:

- Perceived clarity of information shown
- Accuracy in determining what the visual display means

**Accuracy Question:** Looking at the section highlighted in yellow above, what does this icon mean to you? Please choose one.

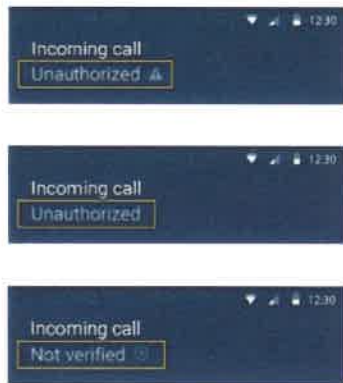
Selections (shown in random order): i) Caller is reputable, ii) Caller is safe to talk to, iii) Caller's identity is authentic and not falsified, iv) Call connection is secure, v) other

**Clarity Question:** When seeing the icon highlighted in yellow in the image above, how clear or confusing do you find this specific icon when trying to decide whether or not you should answer a call?



# Observations :: Comparing TN Validation Failed Displays

## Top display options



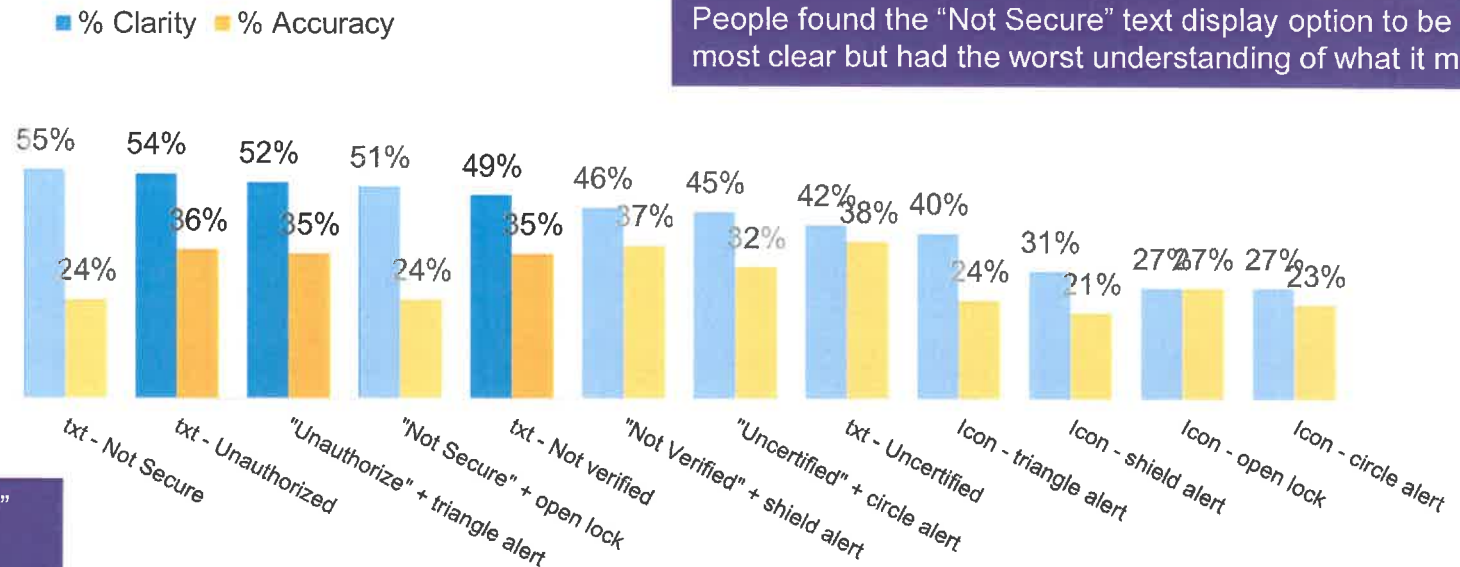
Display options w/ "Unauthorized" text received the overall highest ratings on clarity and accuracy.

## Key Points

People find TN Validation Failed display to be less clear than TN Validation Passed.

Icon only display options had the lowest rating for clarity and accuracy.

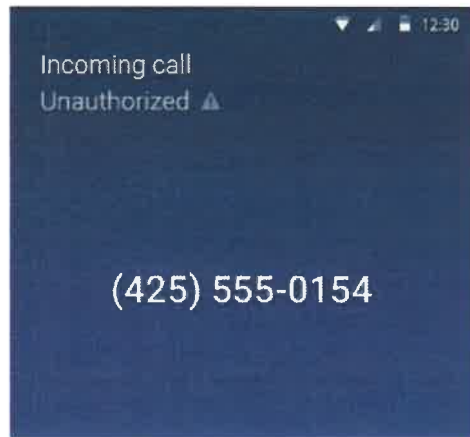
People found the "Not Secure" text display option to be the most clear but had the worst understanding of what it means.



# Observations :: Baseline vs. TN Validation Failed

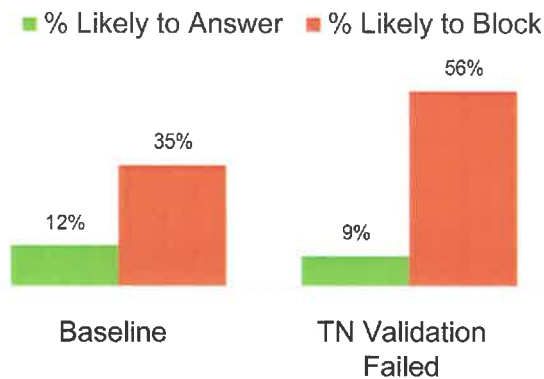


Transaction  
Network Services



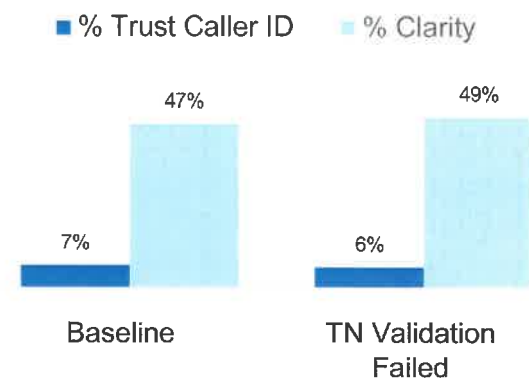
Incoming call  
w/ TN Validation Failed

Key Points



Likelihood to answer doesn't change significantly w/ TN Validation Failed information.

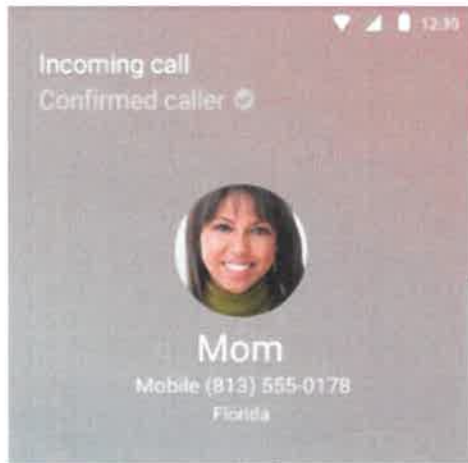
People are more likely to block when TN Validation Failed information is shown.



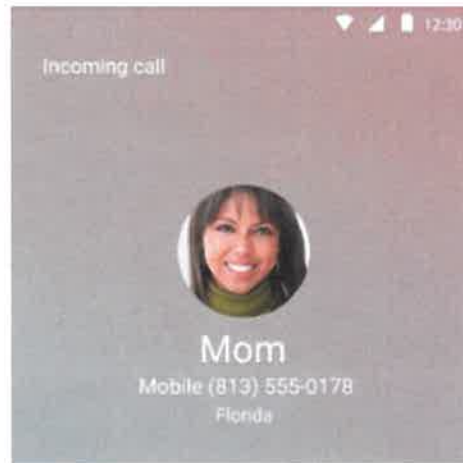
Trust and clarity sentiments remain the same w/ TN Validation Failed information when compared to the baseline.

TN Validation Failed information does not add significant value to the consumer compared to getting no information at all.

## User Type: All Users TN Validation w/ Consumer's Contacts



**Call from contact  
w/ TN Validation Passed**

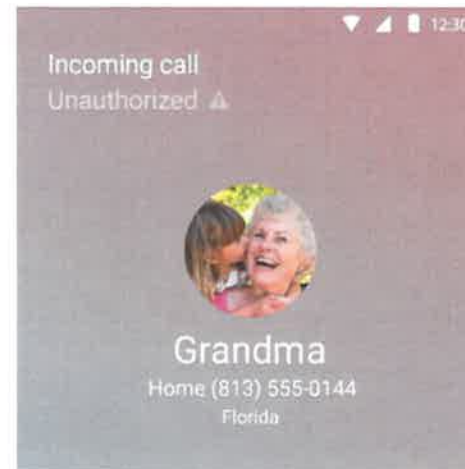


**Call from contact  
w/ TN Validation None**

6 out of 10 calls are likely to have **TN Validation None** information at all.

TN Validation with contact information is confusing. Consumers generally assume they can trust calls from people in their contacts and **TN Validation adds no value.**

*"If I see a call from mom, I'm most likely going to answer it whether or not the Confirmed Caller indicator is shown."*



TN Validation Failed for calls from contacts is very confusing to consumers. It's not clear to the consumer who is actually calling them or if they should answer or not.

## Interesting Findings by Demographics

When looking at the data based on the following groups, there were statistically significantly different behaviors based on demographics:

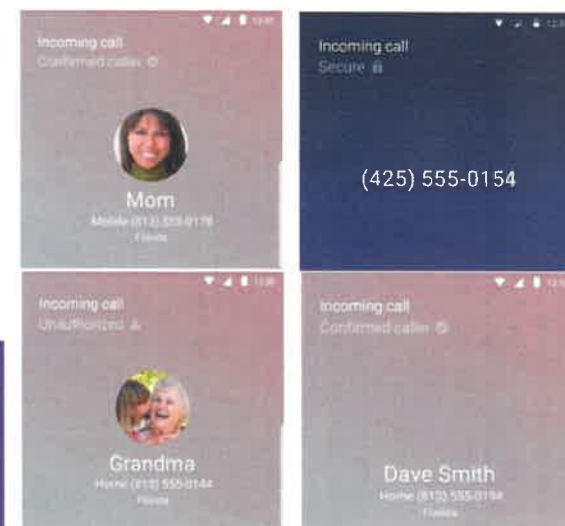
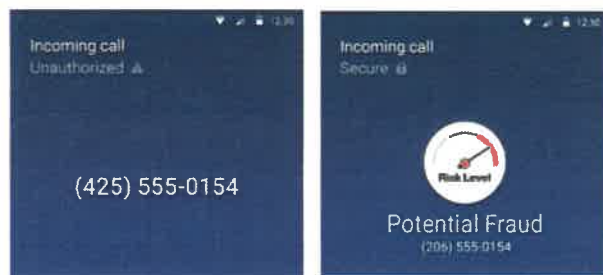
- Gender:
  - Males are more likely to answer calls and trust callers than females.
- Age:
  - Younger respondents (ages 18 to 35) are more likely to answer calls and trust callers than older respondents (age 55 and older)
  - Older respondents (age 55 and older) are more likely than younger respondents (age 18 to 35) to find enhanced ID information helpful
- Education:
  - Respondents with an advanced degree are more likely than other groups to trust callers are who they say they are.
- Income:
  - Those with a high household income (\$100,000 per year or more) are more likely than those with an income below \$100,000 per year to answer calls from unknown numbers and trust callers from unknown numbers.

## Interesting Findings by Mobile Behavior

When looking at the data based on the following groups, there were statistically significantly different behaviors based on mobile behaviors:

- Experience with Caller ID or Caller Protection Services:
  - Those with experience with Caller ID or Caller Protection services are more likely to answer calls, block calls, and trust callers than those with no Caller ID or Caller protection services experience.
- Receive unknown, but wanted calls:
  - Those receiving 10 or more unknown, but wanted calls per week are more likely to answer calls and trust callers on the other line than those who receive less than 10 unknown, but wanted calls per week.
- Receive unknown, unwanted calls:
  - Those receiving 10 or more unknown, unwanted calls per week are more likely to be interested in blocking calls than those receiving less than 10 unknown, unwanted calls per week.

# Conclusion :: Carrier Specific Display Rules



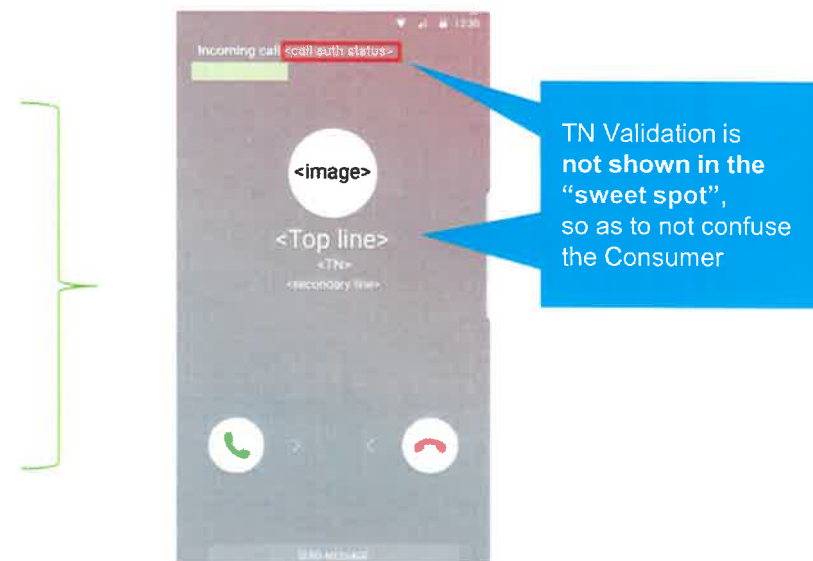
## Key Points of Consideration:

- Users did not adjust behavior w/ or w/o TN Validation displayed
- Users found analytics more important than TN Validation
- Ability to display the identity of the caller and the purpose of the call was a key feature consumers were looking for
- Carriers take on greater cost when consumers are confused (i.e.; calls to care), so education is required for any new display – icon or text
- Each provider has a different Analytics Scoring approach, requiring a unique display strategy per Carrier



## Conclusion :: Learnings

- ❑ Ability to display the identity of the caller and the purpose of the call was a key feature users were looking for
- ❑ Don't show anything related to TN Validation and rely on your analytics to mark calls as "bad"
- ❑ Be as discreet as possible when displaying the TN Validation indicator and be prepared to educate users in order to avoid care calls
- ❑ Users find Accuracy of Analytics important; STIR/SHAKEN puts additional pressure on the Analytics providers to correctly classify/tag the caller



# Thank You!



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